



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/075,049	02/12/2002	Timothy James Trenary	BLD919990039US1	7469
46919	7590	02/24/2006	EXAMINER	
KONRAD RAYNES & VICTOR, LLP. ATTN: IBM36 315 SOUTH BEVERLY DRIVE, SUITE 210 BEVERLY HILLS, CA 90212			TUCKER, WESLEY J	
			ART UNIT	PAPER NUMBER
			2623	

DATE MAILED: 02/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/075,049		TRENARY ET AL.	
	Examiner		Art Unit	
	Wes Tucker		2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10, 12-38, 40 and 42-47 is/are rejected.
- 7) ☒ Claim(s) 9, 11, 39 and 41 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5-27-03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-47 are rejected under 35 U.S.C. 101 because the claimed application is directed to non-statutory subject matter. Claims 1, 18 and 31 are drawn to a computer-implemented process that merely manipulates data or an abstract idea, or merely solves a mathematical problem without a limitation to a practical application in the technological arts. Claims 1, 18 and 31 simply disclose receiving data and transforming that data by shifting it with no real application as to why the data is transformed or what the data represents.

In order for a claimed invention to accomplish a practical application it must produce a useful, concrete and tangible result,” State Street, 149F.3d at 1373, 47 USPQ2d at 1601-02 (see MPEP 2106.II.A). A practical application can be achieved through recitation of “a physical transformation outside the computer for which a practical application in the technological arts is either disclosed in the specification or would have been known to a skilled artisan,” or “limited to a practical application within the technological arts” (MPEP 2106 IVB2(b)). Currently Claims 1, 18 and 31 meet neither of these criteria. In order for the claimed process to produce a “useful, concrete and tangible” result, recitation of one or more of the following elements is suggested:

Art Unit: 2623

- The manipulation of data that represents a physical object or activity transformed from outside the computer (MPEP 2106 IVB2(b)(i)).
- A recitation of a physical transformations outside the computer, for example in the form of pre or post computer processing activity (MPEP 2106 IVB2 (b)(i)).
- A direct recitation of a practical application in the technological arts (MPEP 2106 IVB(b)(ii)).

All subsequent dependent claims depending on independent claims 1, 18 and 31 are also accordingly rejected under 35 U.S.C. 101. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-47 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either an asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention. This 112 rejection is asserted for the same reasons as the 101 rejection cited above. Claims 1, 18 and 31 simply disclose receiving data and transforming that data by shifting it with no real application as to why the data is transformed or what the data represents. Therefore one of ordinary skill in the art would not know how to use the invention or even know what the invention is to be used for.

All subsequent dependent claims depending on independent claims 1, 18 and 31 are also accordingly rejected under 35 U.S.C. 112 2nd paragraph. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-8, 10, 12-13, 15- 26, 28-38, 40, 42-43 and 45-47 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,452,96 to Yim.

With regard to claim 1 Yim discloses a method for performing a fractional shift of transformed data comprising:

Providing at least one fractional shift transform matrix in non-volatile storage that is capable of fractionally shifting data by a shift factor (column 7, lines 5-25). Yim discloses determining a motion vector and from the motion vector determining a prediction error block using the differences between pixels. Therefore the fractional transform matrix is interpreted as the motion vector calculation and compensation

Art Unit: 2623

because it is used to shift the transform domain reference block a fractional pixel amount based upon the fractional pel displacement (column 3, lines 45-67 and column 4, lines 1-4).

Yim further discloses receiving the transformed data (column 3, lines 1-7). Yim partially decodes the video data to obtain a transform domain representation of the image.

Yim further discloses applying the at least one fractional shift transform matrix to the transformed data to generate data that is fractionally shifted by the shift factor without inverse transforming the transformed data (column 3, lines 15-23).

With regard to claim 2, Yim discloses the method of claim 1, wherein the transformed data comprises image data (column 3, lines 10-20)

With regard to claim 3, Yim discloses the method of claim 1, wherein the transformed data includes data that has been downsampled (column 16, lines 9-22).

With regard to claim 4, Yim discloses the method of claim 1, wherein the shift factor is between zero and one (column 6, lines 20-24).

With regard to claim 5, Yim discloses the method of claim 1, wherein the non-volatile storage includes matrices having different shift factors to perform fractional pel shift at different shift factors (column 6, lines 1-28). Yim discloses shifting by factors of

Art Unit: 2623

fractional pixel accuracy depending on the motion vector or the degree of shift calculated. Therefore it follows that Yim's invention inherently contains multiple different shift matrices for use according to the desired shift factor.

With regard to claim 6, Yim discloses wherein the transformed data is transformed by applying a Forward Discrete Cosine Transform (FDCT) to an input data stream (column 6, lines 50-67).

With regard to claim 7, Yim discloses the method of claim 6, wherein the input data stream was encoded performing entropy encoding after applying FDCT and quantization (column 8, lines 47-57).

With regard to claim 8, Yim discloses the method of claim 7, further comprising:
Entropy decoding the received encoded data before applying the at least one fractional shift transform matrix (Fig. 4, element 314); and
Entropy encoding the output fractionally shifted transformed data (Fig. 4, element 308).

With regard to claim 10, Yim discloses the method of claim 8, wherein the fractional shift is collocated on a first data point in the encoded data to fractionally shift the data (column 10, lines 25-50).

Art Unit: 2623

With regard to claim 12, Yim discloses the method of claim 1, wherein each fractional shift transform matrix is generated by applying a two-dimensional Forward Discrete Cosine Transform (FDCT) to a fractional shift matrix including the shift factors (column 11, lines 37-52).

With regard to claim 13, Yim discloses the method of claim 1, wherein the received output encoded data is encoded using one of the JPEG or MPEG compression techniques (column 2, lines 46-63 and column 4, lines 45-67).

With regard to claim 15, Yim discloses the method of claim 1, further comprising:
Decoding the output encoded data and rendering the decoded data on an output device (column 16, lines 40-57).

With regard to claim 16, Yim discloses the method of claim 15, wherein the output devices is a member of a set of output devices comprising a printer, display monitor, and storage (column 16, lines 40-57).

With regard to claim 17, Yim discloses the method of claim 1, wherein the fractional shift matrix is modified to accomplish dequantization and requantization of the transformed data without inverse transforming the transformed data (column 9, lines 1-4).

Art Unit: 2623

With regard to claim 18, Yim discloses a system for performing a fractional shift of transformed data comprising a non-volatile storage (column 16, lines 50-57). Yim discloses the shifting method he performs is performed using a storage device and controllers and processors as is typical of image processing systems.

Yim further discloses at least one fractional shift transform matrix represented in the non-volatile storage that is capable of fractionally shifting data by a shift factor (column 7, lines 5-25). Yim discloses determining a motion vector and from the motion vector determining a prediction error block using the differences between pixels. Therefore the fractional transform matrix is interpreted as the motion vector calculation and compensation because it is used to shift the transform domain reference block a fractional pixel amount based upon the fractional pel displacement (column 3, lines 45-67 and column 4, lines 1-4).

Yim further discloses means for receiving the transformed data (column 3, lines 1-7 and Fig. 4, elements 300 and 306). Yim partially decodes the video data to obtain a transform domain representation of the image.

Means for applying the at least one fractional shift transform matrix to the transformed data to generate out transformed data that is fractionally shifted by the shift factor without inverse transforming the transformed data (Fig. 4, element 306 and (column 3, lines 15-23).

With regard to claims 19-25 the discussions of claims 2-8 apply respectively.

With regard to claim 26, the discussion of claim 12 applies.

With regard to claims 28-30, the discussion of claims 15-17 apply respectively.

With regard to claim 31, Yim discloses an article of manufacture (Figs. 4 and 7) including code for performing a fractional shift of transformed data, wherein the code causes operations to be performed, the operations comprising:

Providing at least one fractional shift transform matrix in non-volatile storage that is capable of fractionally shifting data by a shift factor (column 7, lines 5-25). Yim discloses determining a motion vector and from the motion vector determining a prediction error block using the differences between pixels. Therefore the fractional transform matrix is interpreted as the motion vector calculation and compensation because it is used to shift the transform domain reference block a fractional pixel amount based upon the fractional pel displacement (column 3, lines 45-67 and column 4, lines 1-4).

Yim further discloses receiving the transformed data (column 3, lines 1-7 and Fig. 4, elements 300 and 306). Yim partially decodes the video data to obtain a transform domain representation of the image.

Yim further discloses applying the at least one fractional shift transform matrix to the transformed data to generate output transformed data that is fractionally shifted by the shift factor without inverse transforming the transformed data (Fig. 4, element 306 and (column 3, lines 15-23).

With regard to claims 32-38, 40, 42, 43 and 45-47, the discussions of claims 2-8, 10, 12, 13 and 15-17 apply respectively.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14, 27 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,452,969 to Yim et al.

With regard to claim 14, Yim discloses the steps in the method of claim 1, but does not explicitly disclose that the steps be performed by a printer. However Yim discloses that his invention is performed in the environment of image processing and teaches a video display with a controller for controlling the output of the image data. Printers are just one of many forms of image processors that accept input perform image processing and generate output. Printers are typically used to output image data after some sort of processing even if the processing is a simple data transfer operation. When converting an image from a display image to information necessary to print the image there is always some kind of conversion such as from RGB or YUV space to Cyan Magenta and Yellow printer ink representation. Therefore it would have been

Art Unit: 2623

obvious to one of ordinary skill in the art at the time of invention to enable a printer to perform the image processing taught by Yim in order to provide a printer with output information including a shifting for generating an output image.

With regard to claims 27 and 44, the discussion of claim 14 applies.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wes Tucker whose telephone number is 571-272-7427. The examiner can normally be reached on 9AM-5PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571-272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 10/075,049
Art Unit: 2623

Page 12

Wes Tucker

2-19-06 


VIKKRAM BALI
PRIMARY EXAMINER